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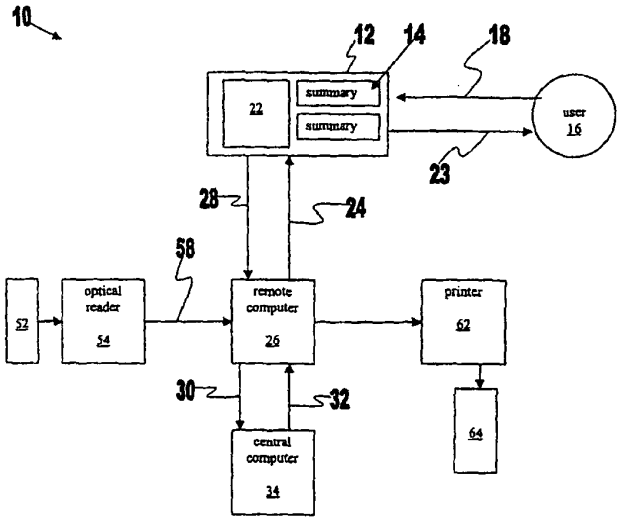
(54) Title: INTUITIVE SYSTEM AND METHOD FOR ENTERING A WAGER TRANSACTION



(57) Abstract: The present invention provides a method for inputting a wager transaction based on the simulation of a hand-marked wager selection using a pen or pencil. The method uses electronic means via a software program, visual display, and a point-of-sale computer device. A preprinted wager slip is realistically reproduced on a computer display through the use of colors, character fonts, and graphical layout. The process of marking the marksense slip with a pen is replaced with an electronic process where selections are made via a computer input point device, such as a touch screen, a keyboard, or a mouse for example. The software program does not allow the user to make invalid selections and provides real-time feedback to the user about the completion of the selection process. A system implementing the above-mentioned method is also provided.

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INTUITIVE SYSTEM AND METHOD FOR ENTERING A WAGER TRANSACTION

Background and Summary of the Invention

This invention relates generally to a system and method of computer data entry and, more particularly, to an interactive wagering transaction process for lottery games, totalizator races, and sports betting, which permits the user to review and correct gaming selections in real-time as the wager is registered.

Traditionally, wager transactions are entered into the point-of-sale computer terminal in one of two ways. The first method is via a hand-marked marksense slip, betting ticket, or marksense bet. The user makes their selections by putting pencil or pen marks in the appropriate boxed areas, or fields, on a preprinted paper marksense slip. The marksense slip is then fed into a reader mechanism attached to the point-of-sale terminal. The reader mechanism optically reads the marks from the marksense slip paper and translates the mark information into digital information for further processing. If the marksense slip is incorrectly marked, the user's bet is either voided, or a bet is made that doesn't express the user's intent. These complications make for unhappy customers and inefficient data entry procedures.

The second method of input is to allow the user to input selections into the computer systems via a keyboard or computer touch device. These systems typically display user prompts for field input, check boxes for user selection, and other similar computer graphical user interface (GUI) implementations of the input process. This method resembles typical computer data entry methods using GUI software applications. These direct entry methods are intended to more precisely enter data into the computer.

Each of these input processes uses a completely different algorithm and methodology for entry of the data. It is difficult for the user to relate to processes for marking the marksense bet slip via the keyboard or computer input device. While the end result is to enter the same required data into the computer system, the two methodologies have a very different look-and-feel from the user's point of view. While the direct (keyboard) entry may result in fewer mistakes than hand-marking,

the process is not necessary quick, as the process of marking a ticket by keyboard or touch screen is far different from hand-marking. That is, direct data entry is not intuitive. The unintuitive feel of the keyboard entry process may still result in unintended selections for some. Further, keyboard or conventional touch screen entry of betting may take away from the thrill of studying a marksense slip, and marking it by hand.

It would be advantageous if a method could be devised to input wager transaction data into the computer system via the computer input touch device in a manner that emulates the look-and-feel of a hand-marked marksense slip marking.

It would be advantageous if the hand-marked and GUI interface systems inputting wager transactions had the same look-and-feel to the user. It would also be advantageous if the two data input methods utilized the same validation algorithm, and same graphical design.

It would be advantageous if wager transactions could be entered quicker, and with fewer mistakes, without deviating from the traditional methods of marking a betting slip.

Accordingly, a method of entering a wager transaction is provided comprising the steps of:

a) creating a first image representing an unmarked wager marksense slip or betting ticket; and

b) modifying the first image to create a second image representing a marked wager marksense slip. The wager is presented to the bettor as an unmarked ticket, or marksense on a video screen or the like. As the user enters their data into a computer, the computer enters the updates to the video screen to create a "marked" marksense slip.

Following Step b):

c) in response to the second image of the completed marksense slip, registering the wager transaction in a computerized wagering system;

d) providing a validation signal from the computerized wagering system that the wager transaction is successfully registered; and

e) creating a hardcopy of the second bitmap image, whereby a user is given a marked marksense slip which matches their transacted wager, and simulates a hand-marked marksense slip.

The method also provides a correction function. Typically, the electronic images includes a first number of total fields, with a second number of selectable field subsets. Any one of these selectable field subsets expresses a correctly formatted wager. For example, the bettor may be required to select a total of 6 out of 49 numbers. Then, following Step b), the method includes:

b1) checking the selectable field subset to determine if the wager is incorrectly formatted; and

b2) providing an indicator that the wager is incorrect. Through these steps a user is warned of an error in marking their electronic marksense slip.

To simulate the hand-marking of a betting slip, the process is iterative. That is, Steps a) through b2) are repeated a plurality of times. The user is able to see and check entries as they are entered. In this manner, the user is given feedback of proper and improper choices until the electronic marksense is completed.

The method is applicable to betting slips that include a number of panels, where each of which represents a distinct game or wager. Following Step b), the method includes:

b3) providing an indicator of which panels include incorrect wagers, whereby the user is warned which panels need correction; and

b4) providing an indicator of which panels have been modified in Step b) and which panels remain unmodified, as in Step a), whereby the user is warned of marked and unmarked panels on the electronic marksense slip. Thus, the bettor is warned which panels are blank, which are correctly formatted, and which are incorrectly formatted.

The method is also adaptable to systems where bettors typically enter hand-mark tickets to provide an error checking function. The method includes:

a) optically reading the marked marksense slip, whereby the marking of the marksense slip is checked for errors.

b) determining if the wager transaction includes invalid field selections;

c) generating indicators to denote invalid field selections; and

d) in response to the indicators in Step c), modifying the wager transaction until the invalid field indicators are eliminated, whereby the wager is registered without errors.

Also provided is a system for entering a wager transaction. The system comprises a user interface having an input to receive commands from a user, such as a keyboard, light-pen, mouse, or computer touch screen. The user interface translates user commands into electronic signals. Also included is an indicator, such as a video or liquid crystal display (LCD) screen, or light emitting diode (LED) display to represent a wager transaction. The display receives signals modifying the visual representation. The system further includes a remote computer connected to the display and the user interface. The remote computer modifies signals to the display in response to user commands, so that the user modifies a wager transaction electronically in response to visual cues.

The system includes a central computer to track and coordinate wager transactions. The central computer is connected to each remote computer to register a wager transactions and to acknowledge the registration of the wager transaction.

In some aspects of the invention, a bettor inputs a hand-marked, or hardcopy marksense slip into the system. Then, the system further includes an optical reader to scan the hardcopy marksense slip, and to provide signals representing the scanned marksense slip to the remote computer. The remote computer includes an error checking function. The scanned marksense slip is displayed, with the display indicating the presence of errors. A printer, connected to the remote computer, provides the bettor with a hardcopy of the completed wager transaction.

Brief Description of the Drawings

Fig. 1 illustrates the present invention system of entering a wager transaction.

Fig. 2 illustrates an example of a typical marksense slip (prior art).

Fig. 3 is a simplified flowchart illustrating the present invention method for entering a wager transaction.

Fig. 4 is a simplified flowchart of the present invention method for a user to enter a wager transaction.

Fig. 5 is a flowchart illustrating the present invention method for correcting a wager transaction.

Fig. 6 is a depiction of the flowcharts of Figs. 3-5 illustrating the use of a touch screen computer to implement the invention method.

Fig. 7 is a detailed depiction of the summary panel check function, Step 412 of Fig. 6.

Fig. 8 is a detailed depiction of "Clear" button (Step 502) in the touch screen invention method of Fig. 7.

Fig. 9 is a detailed depiction of the "Send" button, Step 506 of Fig. 7.

Fig. 10 is a detailed depiction of the "Update Screen" function, Step 428 of Fig. 6.

Figs. 11 through 13 illustrate an example of a lottery wager implementation of the present invention for a touch input data entry.

Figs. 14 and 15 depict an example of a lottery wager implementation of the present invention for the correction of an incorrectly marked marksense slip.

Figs. 16 through 18 depict an example of a tote wager implementation of the present invention for touch input data entry.

Figs. 19 and 20 depict an example of a tote wager implementation of the present invention for correction to an incorrectly marked marksense slip.

Detailed Description of the Invention

Fig. 1 illustrates the present invention system of entering a wager transaction. System 10 comprises a user interface 12 having an input 14 to receive commands from a user 16. The user commands are represented by the arrow labeled with reference designator 18. User interface 12 translates user commands 18 into electronic signals.

Indicator 22 visually represents a wager transaction, and has an input to receive signals modifying the visual representation. The input is represented by the

arrow labeled as reference designator 24. Typically, indicator 22 is a cathode ray tube (CRT), LCD screen, or the like. In some aspects of the invention, indicator 22 is an LED display, or even a fixed image of a marksense slip with the active fields represented by LEDs. The interface from indicator 22 to user 16 is represented by an arrow labeled 23. Interface 23 is the observation of indicator 22 by user 16.

Indicator 22 and user interface 12 need not be co-located. For example, the user may input commands on a keyboard and review of consequences of keystrokes on the electronic display. However, in one aspect of the invention, user interface 12 and indicator 22 are co-located to better give the user the sensation of "marking" a slip. For example, a touch screen and light-pen are two methods of co-locating the two functions. Indicator 22 may include "Exit", "Clear", and "Send" buttons, as well as an area for at least one "Summary Panel", and finally, an area with selectable boxes or fields for a particular game.

A remote, or point-of-sale computer 26 has a first output operatively connected to the input of indicator 22. The output connection is represented by an arrow labeled with reference designator 28. A first input is operatively connected to the output of user interface 12 on line 24 to receive communicated electronic signals. As is understood by those skilled in the art, signal lines 24 and 28 are often common data and address buses, multiplexed at different times. Remote computer 26 modifies the signal to indicator 22 in response to user commands 18. In this manner, a user modifies a wager transaction electronically in response to visual cues 23.

Remote computer 26 typically includes processors and memory (not shown) to accomplish its tasks. Computer memory includes transactional data such as the wager type, number/runner selection, and bet amount. In one aspect of the invention, the displayed image is created through the use of a bitmap image file. This file is created by optically scanning an image of the marksense slip into a computer system via a computer paper-scanning device. Alternately, computer graphics artwork is created which is an exact replica of the image of the marksense slip. The bitmap image is stored in memory, such as on a computer disk, as a bitmap image file utilizing any of the currently available computer bitmap image file formats.

Typically, wagering transactions are enacted with a ticket, or marksense slip. There are perhaps as many types of marksense slips as there are betting games. However, all these slips share a common feature of fields which are selected to represent the gambler's choice. For convenience, the present invention describes common marksense slips, with specific examples. However, the system and the method of the present invention are intended to cover any wagering transaction that can be enacted with a marksense slip, or the equivalent.

Whatever its form, it is understood that the wager transaction is formatted with a marksense slip. The first output of remote computer 26 generates signals on line 24 to create a bitmap, or electronic image file representation of a marksense slip. Indicator 22 accepts signals from remote computer 26 to display a bitmap image representation of a marksense slip. User interface 12 outputs commands on line 24 to modify the bitmap image file in response to user commands 18, whereby the user responds to the display of a marksense slip to modify the bitmap image.

Remote computer 26 has a second output to signal the registration, placing, or making of the wager transaction on line 30, and a second input to accept a signal signifying that the wager transaction has been registered on line 32. System 10 further comprises a central computer 34 having at least one input operatively connected to the second output of remote computer 26 on line 30, and at least one output operatively connected to the second input of remote computer 26 on line 34. Central computer 34 registers a wager transaction and acknowledges the registration of the wager transaction. As can be appreciated by those skilled in the art, lines 30 and 32 can be a common bus. It can also be appreciated that all, or some of the functions of remote computer 26 can be incorporated into, and fulfilled by central computer 34.

Fig. 2 illustrates an example of a typical marksense slip (prior art). Marksense slip 50 includes a first plurality of fields, represented by numbers 1 through 49. In one game a correctly formatted, or "filled-in" wager transaction includes entering a second plurality of selected field subsets, for example, 5 of the 49 fields. Returning to Fig. 1, remote commuter 26 includes a function, or routine to check if the selected field subsets are correct. Remote unit 26 outputs signals on line

24 to indicator 22 to represent errors in the selection of fields. Specific examples of this process are presented below. Remote unit 26 continually updates the bitmap image file in response to user commands 18 to reselect fields until the wager transaction is judged as a correctly formatted wager transaction. Remote unit 26 withholds the registration of a wager transaction until the wager transaction is judged a correctly formatted wage transaction.

In some aspects of the invention where the correction feature is highlighted, user 16 provides a hardcopy marksense slip 52. That is, the user presents a hand-marked slip. The marksense slip 52 includes a number of markable box areas where the user can make transaction selections by using a pen/pencil to make marks in the appropriate mark boxes. The form and layout of the marksense slip is dependent upon the type of associated wager transaction. Then, system 10 further comprises an optical reader 54 having a first input, represented by the arrow labeled with reference designator 56 to scan hardcopy marksense slip 52. Optical reader 52 has an output, represented by the arrow labeled with reference designator 58, to provide electrical signals representing the scanned marksense slip. Remote computer 26 has a third input operatively connected to the output of optical reader 54 on line 58. Remote computer 26 generates a bitmap image file representation of the scanned marksense slip and checks the bitmap to determine if the selected field subsets are correctly formatted, whereby a marksense slip is scanned for errors, and corrected, before a wager is registered.

Remote computer 26 has a third output to provide printing commands on line 60, in some aspects of the invention. Then, system 10 further comprises a printer 62 having an input operatively connected to the third output of remote computer 26 on line 60. Printer 62 provides the user a hardcopy 64 of the wager transaction.

In one preferred embodiment of the invention, a touch screen user interface 12 is a key component of the point-of-sale wager transaction system 10. The type of the video display and the touch screen technology varies based on the exact hardware configuration of the point-of-sale computer system 10. Video display device 22 is capable of displaying textual information as well as graphical and bitmap information under software control. The touch screen device acts as a computer touch device.

That is, functions performed by remote computer 26 and user interface 12 are combinable in some aspects of the invention. The user provides input 18 to remote computer 26 by actually touching the touch screen device. The software driver associated with the touch screen device provides the high-level software with information about the location and action of the user touch activity. There is a direct correlation between the point information provided as a result of a user touch activity on the touch screen device, and the display resolution and pixel location of the video display device. This relationship is such that the software can determine the information which was located on the video display device under the point of the touch screen "touched" by the user.

Fig. 3 is a simplified flowchart illustrating the present invention method for entering a wager transaction. Step 100 provides a wager, or gambling game. Step 102 creates a first electronic image representing an unmarked wager marksense slip. Step 104, in response to the first electronic image, modifies the first electronic image to create a second electronic image representing a marked wager marksense slip. Step 106 is a product, where a user represents a wager in an electronic format.

In some aspects of the invention, Step 100 provides that wager transactions are recorded in a computerized system of wager recordation, and further steps follow Step 104. Step 105a, in response to the second electronic image of the marked marksense slip, registers a wager transaction in the computerized wagering system. Step 105b provides a validation signal from the computerized wagering system that the wager transaction is successfully registered. Step 105c creates a hardcopy of the second electronic image, whereby a user is given a marked marksense slip which matches their transacted wager. That is, the user receives a ticket with their selections printed, or otherwise transcribed on the ticket.

As explained above in the description of Fig. 2, the electronic images include a first plurality of fields, with a second plurality of selectable field subsets expressing a correctly formatted wager. An incorrectly formatted wager can have too few or too many markable boxes (selectable fields) chosen. Then, Step 102 includes providing the first plurality of fields, and Step 104 includes selecting a field subset. Then, further steps follows Step 104. Step 104a checks the selectable field subset to

determine if the wager is incorrectly formatted, and Step 104b provides an indicator that the wager is incorrectly formatted, whereby a user is warned of an error in marking their electronic marksense slip. Likewise, the user is provided with an indication that the wager is correctly formatted. Step 104c returns to Step 102, whereby Steps 102 through 104b are repeated a plurality of times, giving a user feedback of proper and improper choices until the electronic marksense is completed.

In some aspects of the invention, Step 102 includes the first electronic image including a plurality of panels, with each panel representing an unmarked wager on a marksense slip. That is, each panel represents a distinct game, or a distinct game combination. Then, Step 104 includes the modification to the plurality of panels in the first electronic image to create a plurality of panels in the second electronic image, whereby a plurality of wagers are transacted with a single electronic marksense slip. Step 104d provides an indicator of which panels include incorrect wagers, whereby the user is warned which panels need correction. Step 104e provides an indicator of which panels have been modified in Step 104, and which panels remain unmodified, as in Step 102. In this manner, the user is warned of marked and unmarked panels on the electronic marksense slip. That is, users are warned of which games are being played and which games are being omitted.

In some aspects of the invention, a number selector is provided in Step 100, typically a random or pseudo-random generator. Then, Step 104 includes incompletely modifying the first electronic image. A further step follows Step 104. Step 104f (not shown) uses the number selector to complete the modification of the first electronic image into the second electronic image, whereby the wager selections are completed for the user.

Fig. 4 is a simplified flowchart of the present invention method for a user to enter a wager transaction. Step 200 provides an electronic system of wager transactions. Step 202 presents a visual display representing an unmarked marksense slip that is responsive to commands from the electronic system. Step 204 establishes communications to the electronic system from the user, such as a keyboard, mouse, or touch screen. Step 206, in response to the visual display in Step 202, communicates with the electronic system, and modifies the visual display to represent

a marked marksense slip. Step 208 is a product, where a user communicates their wager through the modification of the electronic visual display.

Fig. 5 is a flowchart illustrating the present invention method for check the format of a wager transaction. Step 300 provides a plurality of selectable field subsets or markable boxes. Step 302 determines if the wager transaction includes invalid field selections. Step 304 generates indicators to denote invalid field selections. Step 306, in response to the indicators in Step 304, modifies the wager transaction until the invalid field indicators are eliminated. Step 308 is a product, where the wager are registered without errors.

In some aspects of the invention, Step 300 provides a marked ("hand-marked") marksense slip. Then, another step precedes Step 302. Step 300a optically reads the marked marksense slip, whereby the marking of the marksense slip is checked for errors. Alternately, the user begins Step 300 with an unmarked marksense slip. Then, other steps precede Step 302. Step 300b (not shown) generates a bitmap image representing an unmarked marksense slip. Step 300c (not shown) modifies the bitmap image to create a wager transaction, whereby the marksense slip is generated electronically, and then corrected.

Typically, Step 304 includes generating a bitmap image file of the wager transaction, and Step 306 includes modifying the bitmap image file, whereby the marksense slip is re-marked electronically. In some aspects of the invention, Step 300 provides a system to accept wager transactions. Then, further steps follow Step 306. Step 306a (not shown) records the corrected wager transaction the system, Step 306b (not shown) generates a hardcopy of the corrected wager transaction.

Fig. 6 is a depiction of the flowcharts of Figs. 3-5 illustrating the use of a touch screen computer to implement the invention method. This figure depicts the software program algorithm that implements the touch mark wager input methodology. Fig. 6 depicts the main input loop which checks for user touch points within a markable box area of the marksense slip bitmap image on the screen. A user touch point within a markable box area results in a new mark being made, a previous mark being removed, or an indication that the selection is not valid.

High-level computer software is attached to the video display device with touch screen via software drivers provided for the hardware components. The computer software interprets the touch activity in order to gather information from the user. Step 400 begins with a menu selection. The computer software displays the bitmap image file from the marksense slip onto the video display device (Step 402). The bitmap image file is translated onto the video display screen so that the size and location of the virtual markable box areas is easily "touchable" by the user. This means that the size of the bitmap image file display area are large enough that the user fingertip correctly touches the markable box area of one markable box, while not touching the markable box area of another. The software establishes the size of the bitmap image file display onto the video display device for future reference in terms of translating user touch points into associated markable box areas.

Computer software creates a summary panel text display area to display the associated text representation of the user selections onto the video display. There may be multiple summary panel text display areas associated with the wager transaction, depending upon the type of the bet and the layout of the marksense slip. Alternately, the user inputs a hand-marked slip into the system (Step 404), and the marks are optically scanned into the system in Step 406.

In Step 408 the user makes selections (or corrections) for wager transaction information, upon seeing the bitmap image of the marksense slip on the video display device. The user is adept at making wager transaction selections in this manner due to previous usage of the actual marksense slips for the same purpose. The user uses his finger to touch the touch screen over the video display device over the markable box areas on the bitmap image of the marksense slip. The user is guided to the correct touch area by the video image display under the touch screen.

Upon notification of the touch activity by the touch screen driver software, the high-level computer software translates the touch point according to the display size of the bitmap image file onto the video screen. In Step 410 the software determines if the user selection is made inside a panel. In not, the summary panel is checked (Step 412, see Fig. 7). The software is capable of translating the touch point into pixel display coordinates, to determine if the touch point is within the box area

associated with a markable box area of the bitmap image (Step 414). The size of the markable box area is dependent upon the size of the displayed bitmap image and the layout of the marksense slip. The software controls the markable box area so that a touch point can only correspond to one markable box area. The software allows for variability so that it is not necessary for the user to touch the exact center of the markable box area.

Upon determining that a user touch point is associated with a markable box area, the software determines how to interpret the touching of that markable box area. If the user has not previously selected that box area, then the touching of the markable box area is interpreted by the software as a marking of the box area.

The software then validates the marking of the box area according to the state of the stored transaction data, with respect to the rules associated with marking of the marksense slip for the wager transaction type. If the software determines that it is valid for the user to make the associated selection, then the software considers the selection made. First, it is determined if the mark is in a proper field or box (Step 414). If not, the mark is ignored (Step 416). If the box has not been previously marked (Step 418), the software outputs a visual indication that the markable box area has been marked onto the video display screen over the bitmap image (Steps 420 and 422). The visual indication represents the user marking of the box area. The exemplary visual indication is an X (or similar symbol) graphically drawn onto the bitmap image area. Also, the software records the associated selection information into the stored transaction data.

If the user has previously selected that box area (Step 418), then the next touching of the markable box area is interpreted as a deletion of the previous mark activity (Steps 424). If the user is selecting the deletion of a previous mark, then the software removes the previous visual indication of the markable box area selection, by deleting the X from the bitmap image area. Also, the software removes the selection information from the stored transaction data. Returning briefly to Step 420, if the mark is invalid, it is ignored (Step 426)

Upon completion of the processing of a markable box update, the software updates the video display information to inform the user of the wager transaction entry process status (Step 428).

Fig. 7 is a detailed depiction of the summary panel check function, Step 412 of Fig. 6. This flow chart depicts the check for the user touch point within a summary panel display area. A user touch point within a summary panel display area changes the current panel and sets the cursor at the touched panel. Step 700 checks if the marker is in the summary panel area of the touch screen. If not, the method checks the clear button (Step 702, see Fig. 8). If the marker is not in a panel area, the input is ignored (Steps 704 and 706). If the marker is in a summary panel text box, the current panel is set (Step 708), the screen is updated (Step 428), and the method waits for user input (Step 512).

Fig. 8 is a detailed depiction of "Clear" button (Step 502) in the touch screen invention method of Fig. 7. This flow chart depicts the check for the user touch point within the Clear button. A user touch point within the Clear button clears the previously entered mark data from the screen. There may be specific Clear buttons associated with particular panels or fields on the screen. This flow chart depicts handling of a screen wide Clear button. If the marker is not on the clear button, the send button is checked (Steps 600 and 602). If the marker is on the clear button, all marks are cleared and the screen is updated (Steps 604 and 606). During the entry of wager transaction information, the user may use a Clear button to initiate clearing of the previously stored wager transaction data. Following the screen update, the method waits for user input (Step 608).

Fig. 9 is a detailed depiction of the "Send" button, Step 602 of Fig. 8. This flow chart depicts the check for the user touch point within the Send button. A user touch point within the Send button causes the currently entered wager transaction to be processed as the wager data. When the user has validly entered the desired wager transaction information into the computer system, and the Send button has been enabled, the user may touch the Send button to complete processing of the transaction (Steps 700 and 702). The process exits at Step 704. If the marker is not on the

"Send" button, then input is ignored and the system waits for user input (Steps 706 and 708).

Fig. 10 is a detailed depiction of the "Update Screen" function, Step 428 of Fig. 6. This flow chart depicts the sub-process of updating the computer video display. This sub-process is activated whenever the user has made a touch point that changes the state of the saved transaction data. First, the software checks the status of each of the panel fields (Step 800). If the panel is not changed, the process continues to the next panel. Steps 804 and 806 act to remove existing marks, while Steps 804 and 808 add new marks (select new fields). Step 810 updates the panel summary text.

The software applies the algorithm required according to the wager type to determine if the transaction data for the panel field as it is currently entered constitutes valid data. If the transaction data for the panel is empty, and the panel is not a required panel field, then the panel color for the panel summary display is set to black (Step 812 and 814). This indicates that the panel field is empty.

If the transaction data is not valid as entered, then the panel color for the panel summary display is set to red (Steps 816 and 818). This indicates that the panel is invalid. The panel may be invalid due to the fact that the panel field requires entries and too few entries have been made. If the transaction data is valid as entered, then the panel color for the panel summary display is set to green (Steps 816 and 820). This indicates that the panel is valid as currently entered.

The update of the status is performed for each of the panel fields associated with the type of the wager transaction (Step 822). The software then checks the status of the entire wager transaction, as it is currently entered (Step 824). If the wager transaction data is valid as it is currently entered, then the Send button is enabled (Step 826). If the wager transaction data does not represent a valid transaction as it is currently entered, then the Send button is disabled (Step 828). The screen update is completed at Step 830.

Exemplary Description of a Touch Input of a Lottery Wager

Figs. 11 through 13 illustrate an example of a lottery wager implementation of the present invention for a touch input data entry. Fig. 11 depicts a marksense slip for a particular lottery game called pick 6 of 49 numbers. The marksense slip has 5 panels for number selections. The user may make number selections in 1 to 5 panels per slip. The panels are labeled panel A through panel E. Panel 1000 has the same layout and markable box areas. The panel label is unique to each panel. Each panel has markable box areas for each of the selectable numbers (1 to 49), and is labeled with reference designator. The panel has a markable box 1002 area to request a quick pick for this panel, and a markable box area 1004 to void the panel.

Fig. 12 depicts the corresponding computer entry screen for the lottery game marksense slip shown in Fig. 11. The markable number selection panel image area of marksense slip has been converted into a computer bitmap image for display on the video display screen. The bitmap image has been displayed onto the screen such that the markable box areas are a convenient size and spacing for use with a touch screen. There is a single display area 1006 for the panel bitmap image. Parts of display area 1006 are used for each of the number selection panels A through E (1008). There are multiple panel summary areas for each of the labeled panels A through E. Upon selection of one of the panel summary display areas, the bitmap image area is updated to reflect the marked boxes for the associated panel. The screen also includes a Clear 1010 and a Send 1012 button.

Fig. 13 depicts a user entered lottery wager transaction via a computer touch screen utilizing the screen layout shown in Fig. 12. The initially selected panel is panel A (1014). The user has selected the numbers 1, 7, 13, 17, 21 and 27 by touching the touch screen in the area over the bitmap display area, which contains those numbers. The user may select the numbers in any order, the software automatically sorts the numbers for display in the panel summary display area.

The color of panel summary display area 1016 has been set to green, since the panel is valid as entered (i.e. the required number of 6 numbers have been selected). At this point, the user may not select any more numbers on this panel. The software will ignore any further touch points over selection numbers. Send button 1012 is

enabled because the wager transaction is valid as it is currently entered (i.e. there is at least 1 valid panel and there are no invalid panels). The user may press Send button 1012 at this point to process the lottery wager for a 6/49 bet with a single panel A for numbers 01, 07, 13, 17, and 21.

Exemplary Description of a Marksense Slip Touch Input Correction of a Lottery Wager

Figs. 14 and 15 depict an example of a lottery wager implementation of the present invention for the correction of an incorrectly marked marksense slip. Fig. 14 depicts a user marked lottery marksense slip. Panel A (1020) is marked correctly, selecting numbers 3, 4, 10, 11, 17, and 23. Panel B (1022) is voided, which overrides the selection of other numbers 46. Panel C (1024) is marked correctly, selecting user numbers 1, 6, and 11 and requesting the computer system to quick pick the remaining numbers. Panel D (1026) is not marked correctly, as numbers 1, 2, 3, 4, and 5 are selected, and the wager type requires 6 number selections in the panel. Panel E (1028) is empty and has no marks.

When the marksense slip shown in Fig. 14 is fed into a optimal mark reader attached to the point-of-sale computer terminal, the software processes the mark data and determines if the marksense slip, as marked, represents a valid transaction or correctly formatted wager. The software feeds the marked information into the touch screen entry process as pre-marked data.

Fig. 15 depicts the computer entry screen for correction of the mark sense slip shown in Fig. 14. Each of the user marks from the marksense slip is transferred as touch screen selections into the software. The software validates and displays the data, indicating which fields have valid data, and which have invalid data. The cursor is positioned in the first incorrectly marked panel, panel D 1030 in this example. The user may then correct the data in panel 1030 in order to create valid transaction data.

In this example, the user may enter another number selection so as to have a total of 6 numbers selected. Or the user may select quick pick to complete the panel and indicate that the computer system should pick the remaining numbers. Or the user may select void to void the panel and indicate to the software that the panel may

be ignored. When panel D 1030 has been corrected and is valid, Send button 1012 is enabled to allow the user to finalize the transaction.

Exemplary Description of a Touch Input of a Tote Wager

Figs. 16 through 18 depict an example of a tote wager implementation of the present invention for touch input data entry. Fig. 16 depicts an exemplary tote bet marksense slip for a double, a treble, or a six up bet. The marksense slip supports any of these bet types. The user must select a bet type 1040 to specify the type of the bet. The user must also select a bet amount 1042 and the starting leg race number 1044. Then the user must select at least one runner (horse) for each of the required race legs of the bet (two legs for a double, three legs for a treble and all six legs for a six up) 1046.

Fig. 17 depicts the computer entry screen for the tote wager marksense slip shown in Fig. 16. The screen layout includes two panel bitmap image areas. The bitmap image areas have been extracted from the marksense slip and converted into computer bitmap images for display on the video display screen.

The first bitmap image is the bet details image panel. The bet details image panel includes markable box areas 1050 for the bet type selection (i.e. DBL = double, TBL = treble, 6UP = six up). It also includes the first leg race number selection area 1052 and the unit bet cost selection area 1054. The bitmap image has been displayed onto the screen such that the markable box areas are a convenient size and spacing for use with a touch screen. The bet details panel has three summary panels associated with it to display the current selection for the bet type 1056, the first leg race number 1058, and the unit bet cost 1060. There is a clear button 1062 associated with the bet details area. If the user presses Clear button 1062, then all of the user selections in the bet details area are cleared.

The second bitmap image is the runners selection area 1064. It includes a markable box area for up to 14 runners, or the field selection which forces selection of all the runners in the field (F = field). There is a single display area for the runner selection bitmap image. The same display area is used for each of the legs of the bet. There are multiple panel summary areas 1066 for each of the legs of the bet labeled

1 to 6. Upon selection of one of the panel summary display areas, the bitmap image area is updated to reflect the marked boxes for the associated race leg. There is a clear button 1068 associated with the runner selection bitmap image area. Clear button 1068 is labeled with the leg number indicating the current race number leg. If the user presses the clear button, then the runner selections in the currently selected leg are cleared. The screen also includes a Clear Screen button 1070. If the user presses Clear Screen button 1070, then all of the user selections are cleared.

Fig. 18 depicts a user entered tote wager transaction via a computer touch screen utilizing the screen layout shown in Fig. 17. The user has selected a double bet type. This means that the user must then select at least one runner in race leg 1 and race leg 2. Therefore, the summary panels for these legs are enabled, and the other legs (i.e. legs 3 through 6) are disabled. The user has selected a unit bet cost of $20, and a starting race leg of the race numbered 3. For the first leg, runner selections summary panel labeled 1, the user has selected the horse numbered 1. For the second leg, runner selections summary panel labeled 2, the user has selected horses numbered 2 and 6.

The user may press the Send button 1080 at this point to process the tote wager of a double bet for $20 with a first leg race number of 3, selecting horse 1 in the first leg, and horses 2 and 6 in the second leg.

Exemplary Description of a Marksense Slip Touch Input Correction of a Lottery Wager

Figs. 19 and 20 depict an example of a tote wager implementation of the present invention for correction to an incorrectly marked marksense slip. Fig. 19 depicts a user marked tote marksense slip. The slip is not marked correctly. The user has selected a treble wager 1090 for $10 (1092) starting with race number six (1094). For the first leg, the user has selected horse number ten (1096), and for the second leg the user has selected horse number eleven (1098). No horse has been selected for the third leg, as is required for a treble wager, so the marksense slip is not correctly completed.

When the marksense slip shown in Fig. 19 is fed into a optimal mark reader attached to the point-of-sale computer terminal, the software processes the mark data and determines that the marksense slip as marked does represent a valid transaction. The software feeds the marked information into the touch screen entry process as pre-marked data.

Fig. 20 depicts the computer entry screen for correction of the mark sense slips shown in Fig. 19. The cursor is positioned on the first incorrectly marked field, panel 1100 for leg number 3 runner selection. The user may enter the runner selection for leg number 3 to make a complete valid entry. Or the user may change the bet type to double 1102, which requires runner selections in only leg number 1 and 2. When the user has corrected the selections, the Send button is enabled to allow the user to complete the transaction.

A unique system and method of marking and entering a wager transaction has been provided which gives the bettor the feel of hand-marking a betting ticket, while simultaneously permitting the bet to be correctly entered in the computer system. A simulation of the betting ticket is presented to the user on a video screen and the user "marks" their ticket by making entries into the computer system. The computer system simultaneously presents the updated selections to the bettor on the video screen, so that the elements of human interaction, visual response, and computer data entry are interactive. Marking the virtual tickets interactively with the computer permits the bets to be checked for accuracy, and allows for simple correction of invalid tickets. Other variations and embodiments of the above-described invention will occur the those skilled in the art.

What is claimed is:

1. A method of entering a wager transaction comprising the steps of:

a) creating a first electronic image representing an unmarked wager marksense slip; and

b) in response to the first electronic image, modifying the first electronic image to create a second electronic image representing a marked wager marksense slip, whereby a user represents a wager in an electronic format.

2. The method as in claim 1 wherein a computerized system is provided to record wager transactions, and including a further step, following Step b), of:

c) in response to the second electronic image of the marked marksense slip, registering a wager transaction in the computerized wagering system.

3. The method as in claim 2 including a further step, following Step c), of:

d) providing a validation signal from the computerized wagering system that the wager transaction is successfully registered.

4. The method as in claim 3 including a further step, following Step c), of:

e) creating a hardcopy of the second electronic image, whereby a user is given a marked marksense slip which matches their transacted wager.

5. The method as in claim 1 wherein the electronic images includes a first plurality of fields, with a second plurality of selectable field subsets expressing a correctly formatted wager, in which Step a) includes providing the first plurality of fields, in which Step b) includes selecting a field subset, and including further steps, following Step b), of:

b1) checking the selectable field subset to determine if the wager is incorrectly formatted;

b2) providing an indicator that the wager is incorrectly formatted, whereby a user is warned of an error in marking their electronic marksense slip.

6. The method as in claim 5 including a further step, following Step b), of:

b3) returning to Step a), whereby Steps a) through b2) are repeated a plurality of times, giving a user feedback of proper and improper choices until the electronic marksense is completed.

7. The method as in claim 5 in which Step a) includes the first electronic image including a plurality of panels, with each panel representing an unmarked wager on a marksense slip, and in which Step b) includes the modification to the plurality of panels in the first electronic image to create a plurality of panels in the second electronic image, whereby a plurality of wagers are transacted with a single electronic marksense slip.

8. The method as in claim 7 including a further step, following Step b), of:

b4) providing an indicator of which panels include incorrectly formatted wagers, whereby the user is warned which panels need correction.

9. The method as in claim 7 including the further step, following Step b), of:

b5) providing an indicator of which panels have been modified in Step b) and which panels remain unmodified, as in Step a), whereby the user is warned of marked and unmarked panels on the electronic marksense slip.

10. A method as in claim 1 wherein a number selector is provided, in which Step b) includes incompletely modifying the first electronic image, and including a further step, following Step b), of:

b5) using the number selector to complete the modification of the first electronic image into the second electronic image, whereby the wager selections are completed for the user.

11. In a electronic system of wager transactions, a method for a user to enter a wager transaction comprising the steps of:

a) presenting a visual display representing an unmarked marksense slip that is responsive to commands from the electronic system;

b) establishing communications to the electronic system from the user; and

c) in response to the visual display in Step a), communicating with the electronic system and modifying the visual display to represent a marked marksense slip, whereby a user communicates their wager through the modification of the electronic visual display.

12. A method of checking the format of a wager transaction, wherein a plurality of selectable field subsets are provided, the method comprising the steps of:

a) determining if the wager transaction includes invalid field selections;

b) generating indicators to denote invalid field selections; and

c) in response to the indicators in Step b), modifying the wager transaction until the invalid field indicators are eliminated, whereby the wager can be registered without errors.

13. The method as in claim 12 wherein a marked marksense slip is provided, and including a step, preceding Step a), of:

optically reading the marked marksense slip, whereby the marking of the marksense slip is checked for errors.

14. The method as in claim 12 in which Step b) includes generating a bitmap image of the wager transaction, and in which Step c) includes modifying the bitmap image, whereby the marksense slip is re-marked electronically.

15. The method as in claim 12 including a further step, preceding Step a), of:

generating a bitmap image representing an unmarked marksense slip; and

modifying the bitmap image to create a wager transaction, whereby the marksense slip is generated electronically, and then corrected.

16. The method as in claim 12 wherein a system is provided to accept wager transactions, and including further steps, following Step c), of:

d) recording the corrected wager transaction with the system; and

e) generating a hardcopy of the corrected wager transaction.

17. A system for entering a wager transaction comprising:

a user interface having an input to receive commands from a user, said user interface translating user commands into electronic signals, said user interface having an output to communicate the electronic signals;

an indicator visually representing a wager transaction having an input to receive signals modifying the visual representation; and

a remote computer having a first output operatively connected to the input of said indicator, and a first input operatively connected to the output of said user interface, said remote computer modifying the signal to said indicator in response to user commands, whereby a user modifies a wager transaction electronically in response to visual cues.

18. The system of claim 17 wherein the wager transaction is formatted as a marksense slip, in which said remote computer first output generates signals to create a bitmap image representation of a marksense slip, in which said indicator accepts signals from said remote computer to display a bitmap image representation of a marksense slip, and in which said user interface outputs commands to modify the bitmap in response to user commands, whereby the user responds to the display of a marksense slip to modify the bitmap image.

19. The system as in claim 18 in which said remote computer has a second output to signal the registration of the wager transaction, and a second input to accept a signal signifying that the wager transaction has been registered, and further comprising:

a central computer having at least one input operatively connected to the second output of said remote computer, and at least one output operatively connected to the second input of said remote computer, said central computer registering a wager transaction and acknowledging the registration of the wager transaction.

20. The system as in claim 18 wherein the marksense slip includes a first plurality of fields and wherein a correctly formatted wager transaction includes correctly entering a second plurality of selected field subsets, in which said remote computer includes a routine to check if the selected field subsets are correctly formatted, said remote computer outputting signals on the first output to said indicator to represent errors in the selection of fields, said remote computer continually updating the bitmap image file in response to user commands to reselect fields until the wager transaction is judged as a correctly formatted wager transaction, and said remote unit withholding the registration of a wager transaction until the wager transaction is judged a correctly formatted wage transaction.

21. The system as in claim 20 wherein the user provides a hardcopy marksense slip, and further comprising:

an optical reader having a first input to scan the hardcopy marksense slip, and an output to provide electrical signals representing the scanned marksense slip; and

in which said remote computer has a third input operatively connected to the output of said optical reader, said remote computer generating a bitmap image file representation of the scanned marksense slip and checking the bitmap image file to determine if the selected field subsets are correctly formatted, whereby a marksense slip is scanned for errors, and corrected, before a wager is registered.

22. The system as in claim 17 in which said remote computer has a third output to provide printing commands, and further comprising:

a printer having an input operatively connected to the third output of said remote computer, said printer providing the user a hardcopy of the wager transaction.

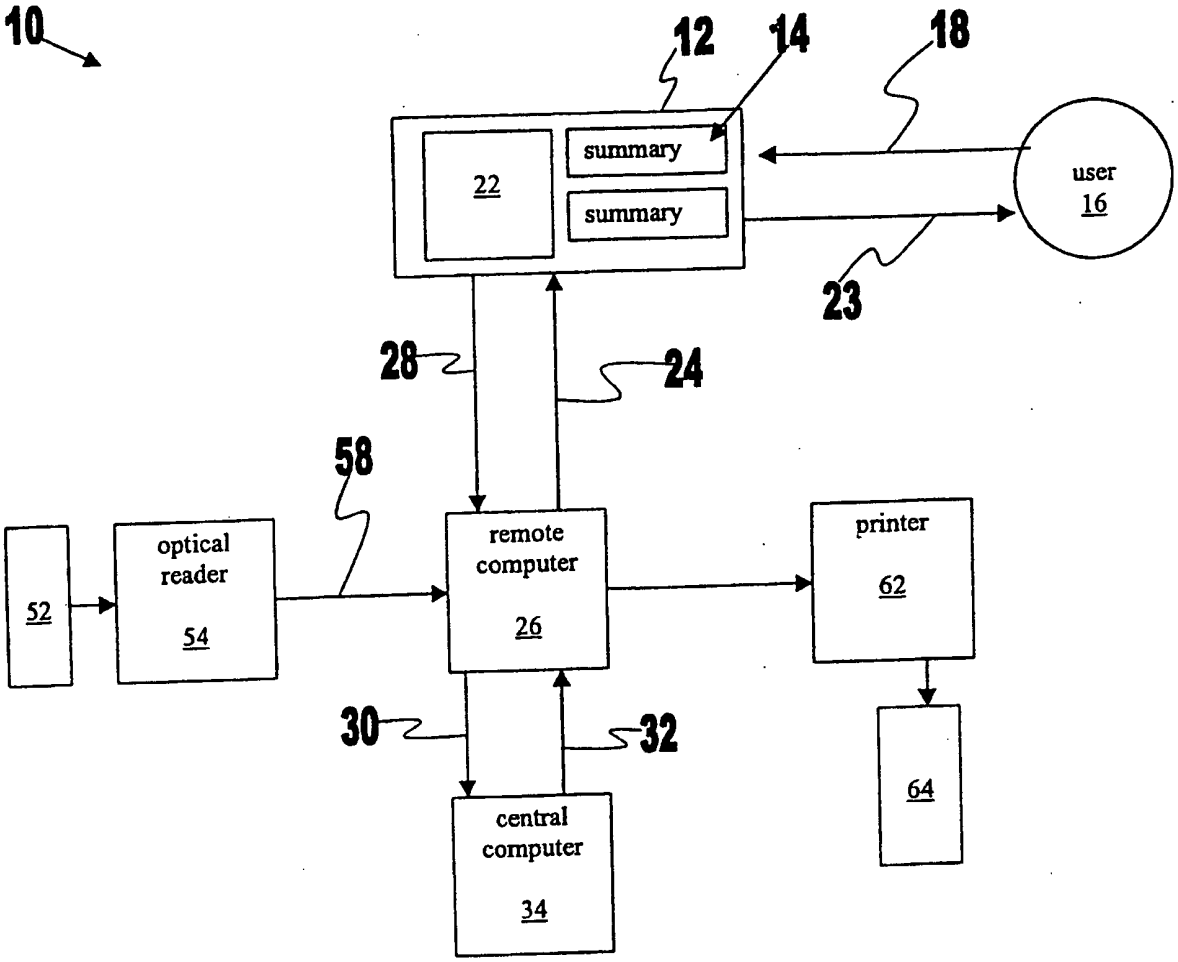
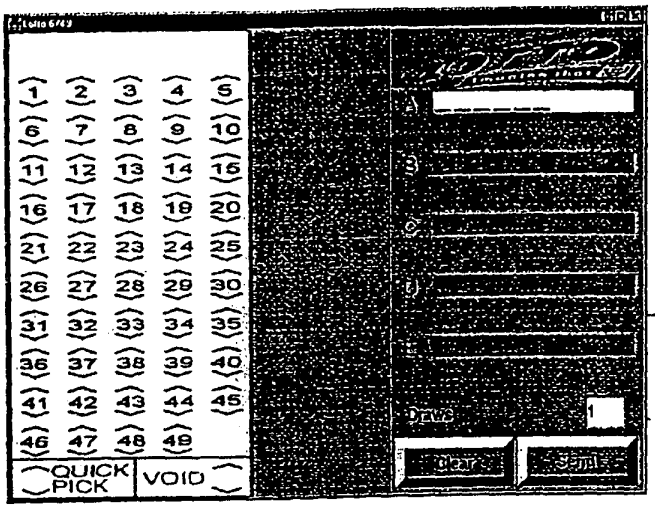

10
12
14
18
22
summary
summary
user
16
23
28
24
58
optical
reader
54
52
remote
computer
26
printer
62
64
30
32
central
computer
34

Fig. 1

Fig. 2


1 2 3 4 5
6 7 8 9 10
11 12 13 14 15
16 17 18 19 20
21 22 23 24 25
26 27 28 29 30
31 32 33 34 35
36 37 38 39 40
41 42 43 44 45
46 47 48 49
QUICK PICK
VOID
50

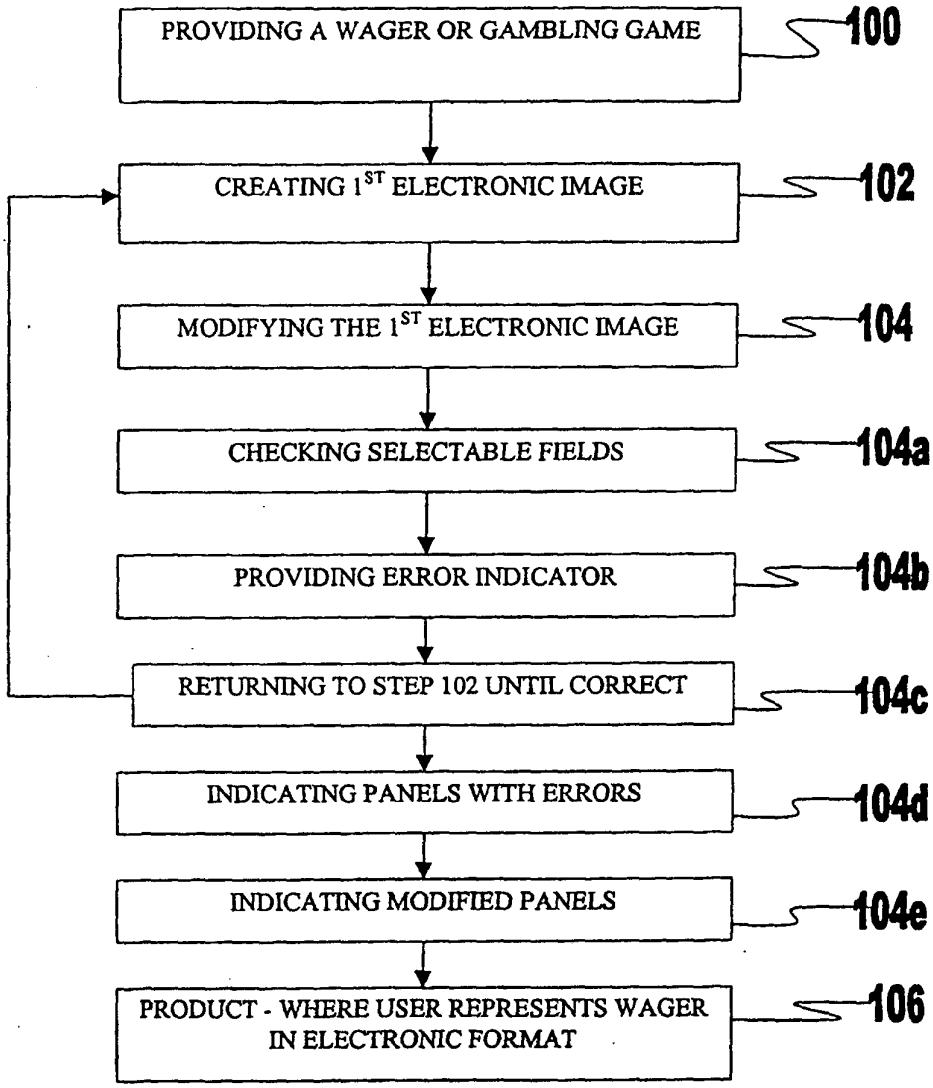

PROVIDING A WAGER OR GAMBLING GAME
100
CREATING 1ST ELECTRONIC IMAGE
102
MODIFYING THE 1ST ELECTRONIC IMAGE
104
CHECKING SELECTABLE FIELDS
104a
PROVIDING ERROR INDICATOR
104b
RETURNING TO STEP 102 UNTIL CORRECT
104c
INDICATING PANELS WITH ERRORS
104d
INDICATING MODIFIED PANELS
104e
PRODUCT - WHERE USER REPRESENTS WAGER IN ELECTRONIC FORMAT
106

FIG. 3

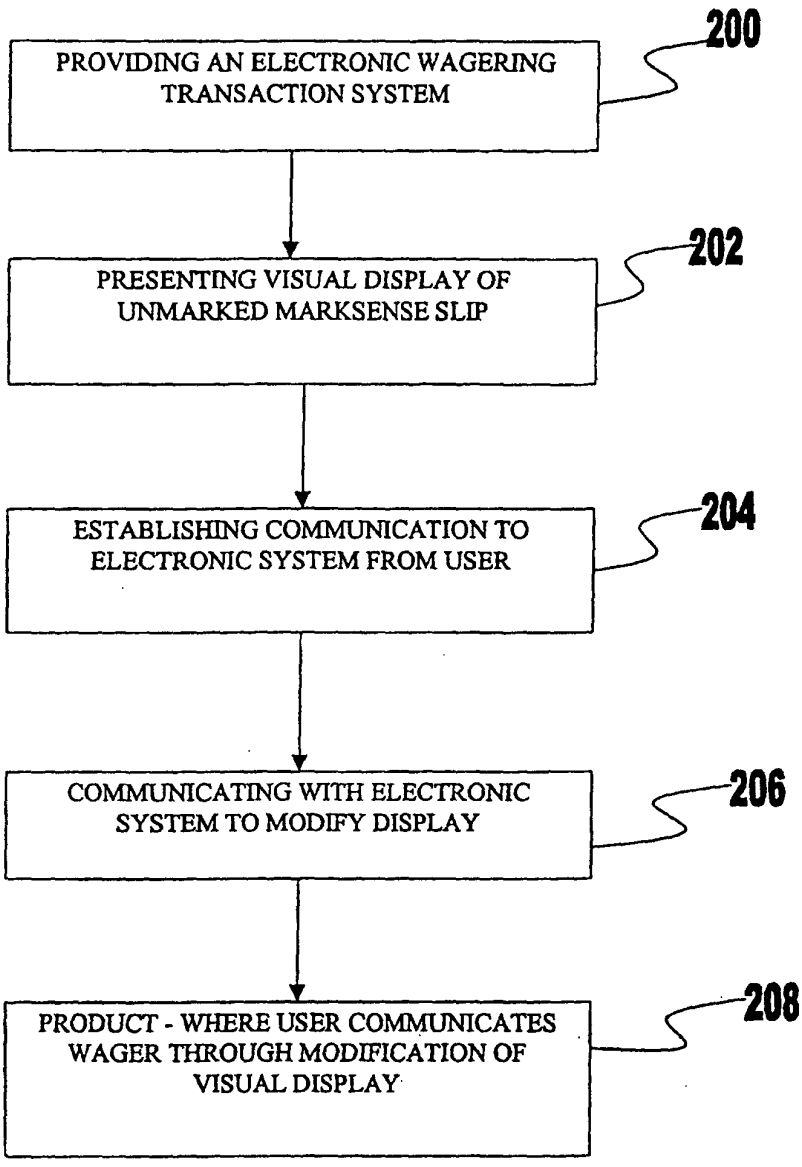

PROVIDING AN ELECTRONIC WAGERING TRANSACTION SYSTEM
200
PRESENTING VISUAL DISPLAY OF UNMARKED MARKSENSE SLIP
202
ESTABLISHING COMMUNICATION TO ELECTRONIC SYSTEM FROM USER
204
COMMUNICATING WITH ELECTRONIC SYSTEM TO MODIFY DISPLAY
206
PRODUCT - WHERE USER COMMUNICATES WAGER THROUGH MODIFICATION OF VISUAL DISPLAY
208

FIG. 4

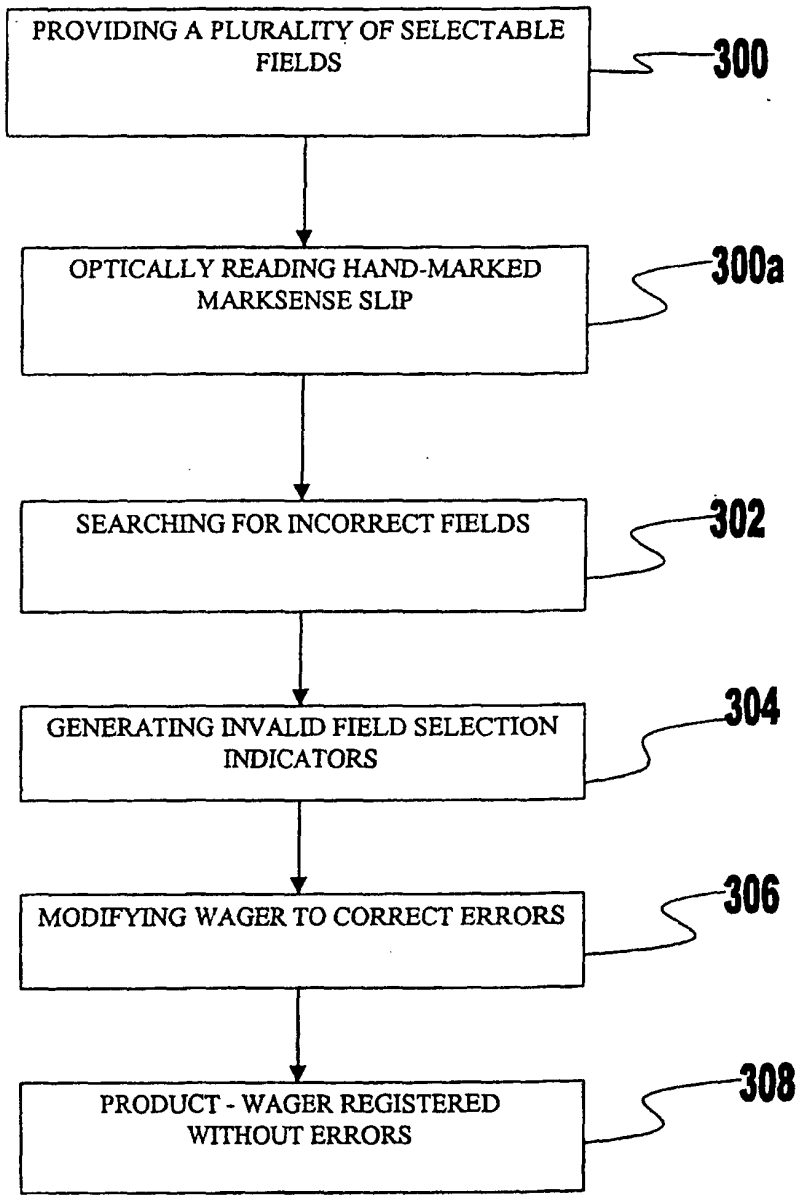

PROVIDING A PLURALITY OF SELECTABLE FIELDS
300
OPTICALLY READING HAND-MARKED MARKSENSE SLIP
300a
SEARCHING FOR INCORRECT FIELDS
302
GENERATING INVALID FIELD SELECTION INDICATORS
304
MODIFYING WAGER TO CORRECT ERRORS
306
PRODUCT - WAGER REGISTERED WITHOUT ERRORS
308

FIG. 5

Fig. 6

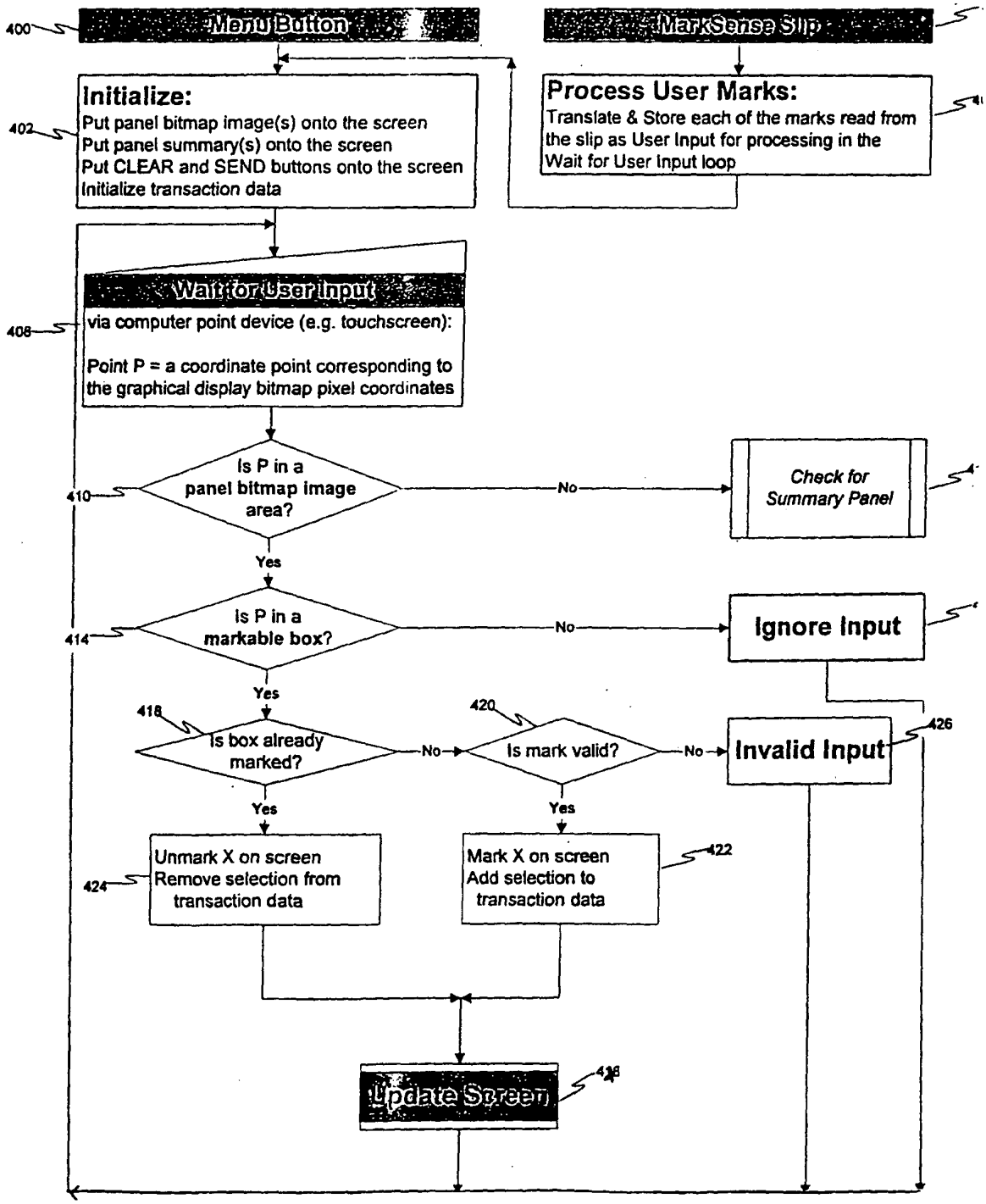

400
Menu Button
MarkSense Slip
Initialize:
Put panel bitmap image(s) onto the screen
Put panel summary(s) onto the screen
Put CLEAR and SEND buttons onto the screen
Initialize transaction data
402
Process User Marks:
Translate & Store each of the marks read from the slip as User Input for processing in the Wait for User Input loop
Wait for User Input
via computer point device (e.g. touchscreen):
Point P = a coordinate point corresponding to the graphical display bitmap pixel coordinates
408
Is P in a panel bitmap image area?
410
No
Check for Summary Panel
Yes
Is P in a markable box?
414
No
Ignore Input
Yes
418
Is box already marked?
No
420
Is mark valid?
No
Invalid Input
426
Yes
Yes
Unmark X on screen
Remove selection from transaction data
424
Mark X on screen
Add selection to transaction data
422
Update Screen

Fig. 7

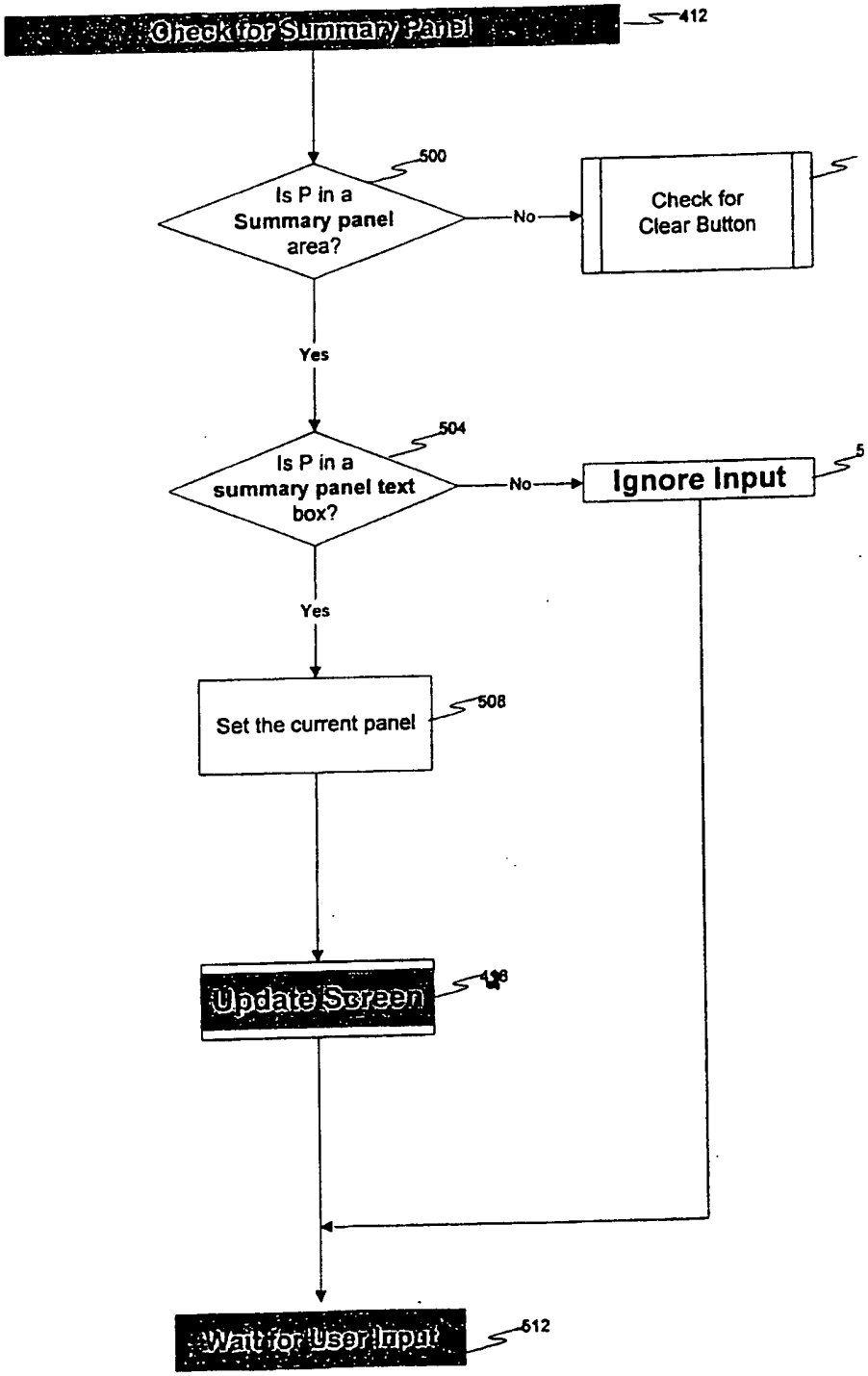

Check for Summary Panel
412
500
Is P in a Summary panel area?
No
Check for Clear Button
Yes
504
Is P in a summary panel text box?
No
Ignore Input
Yes
Set the current panel
508
Update Screen
Wait for User Input
612

Fig. 8

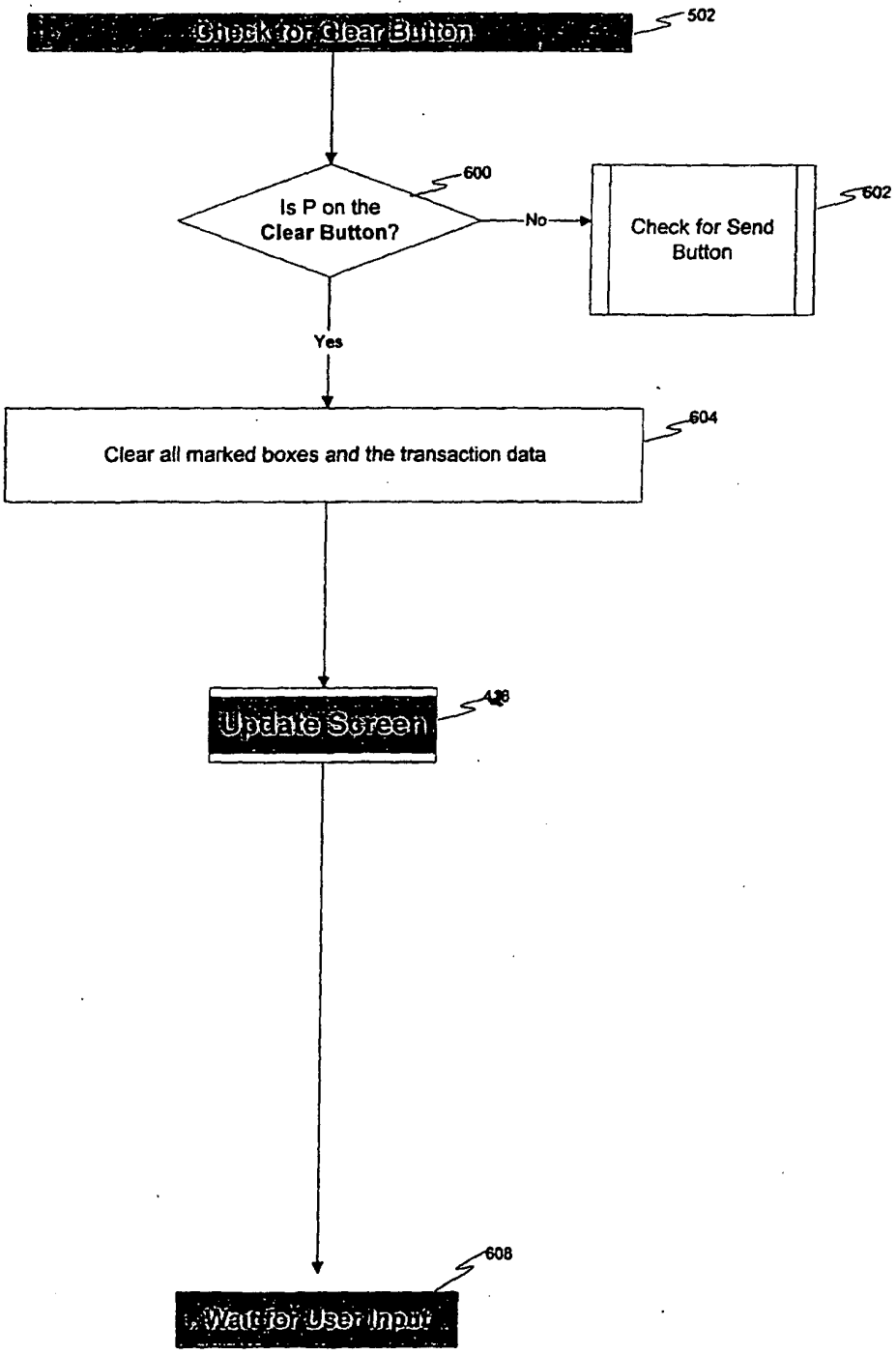

Check for Clear Button
502
Is P on the Clear Button?
600
No
Check for Send Button
602
Yes
Clear all marked boxes and the transaction data
604
Update Screen
Wait for User Input
608

Fig. 9

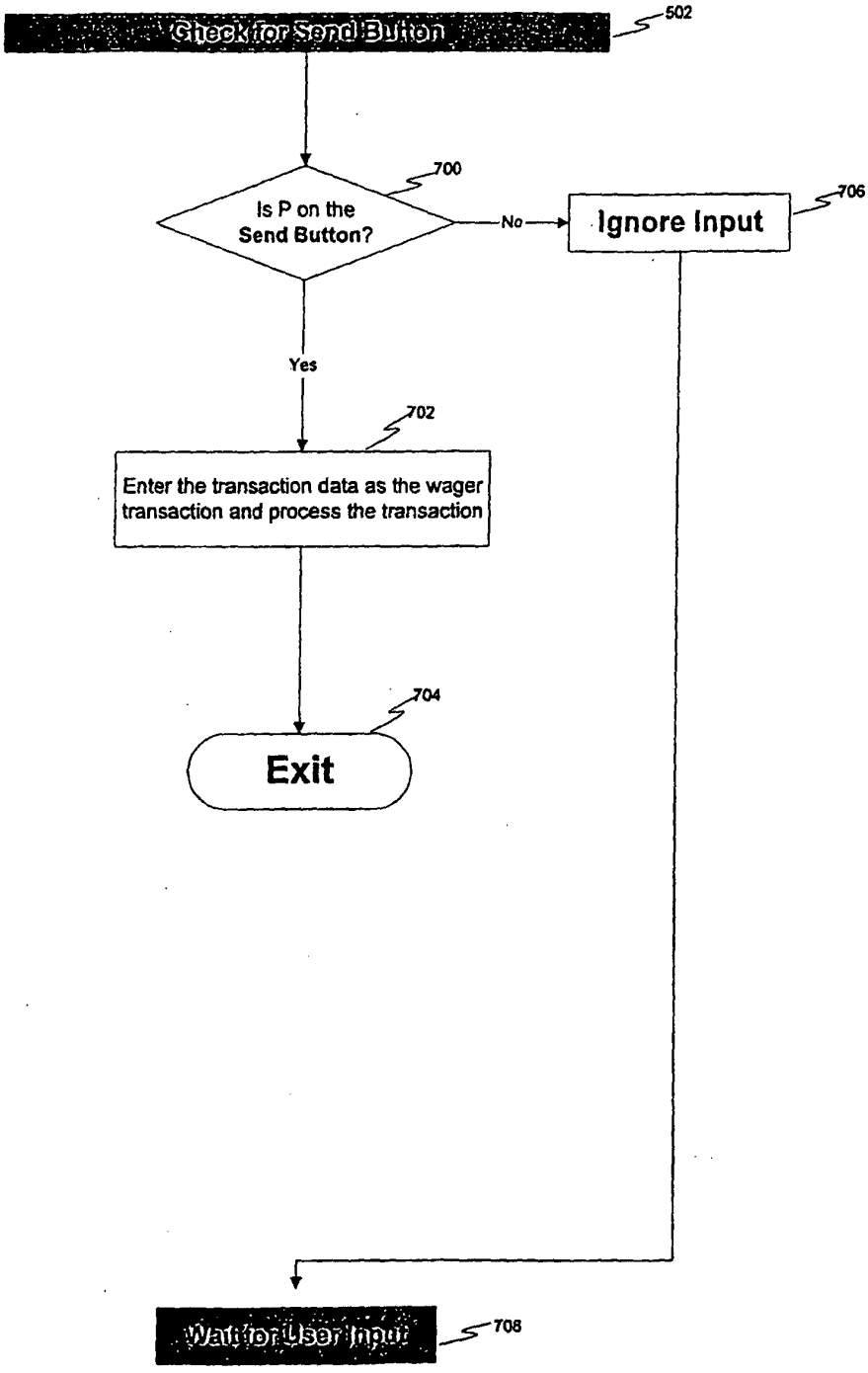

Check for Send Button
502
700
Is P on the Send Button?
No
Ignore Input
706
Yes
702
Enter the transaction data as the wager transaction and process the transaction
704
Exit
Wait for User Input
708

Fig. 10

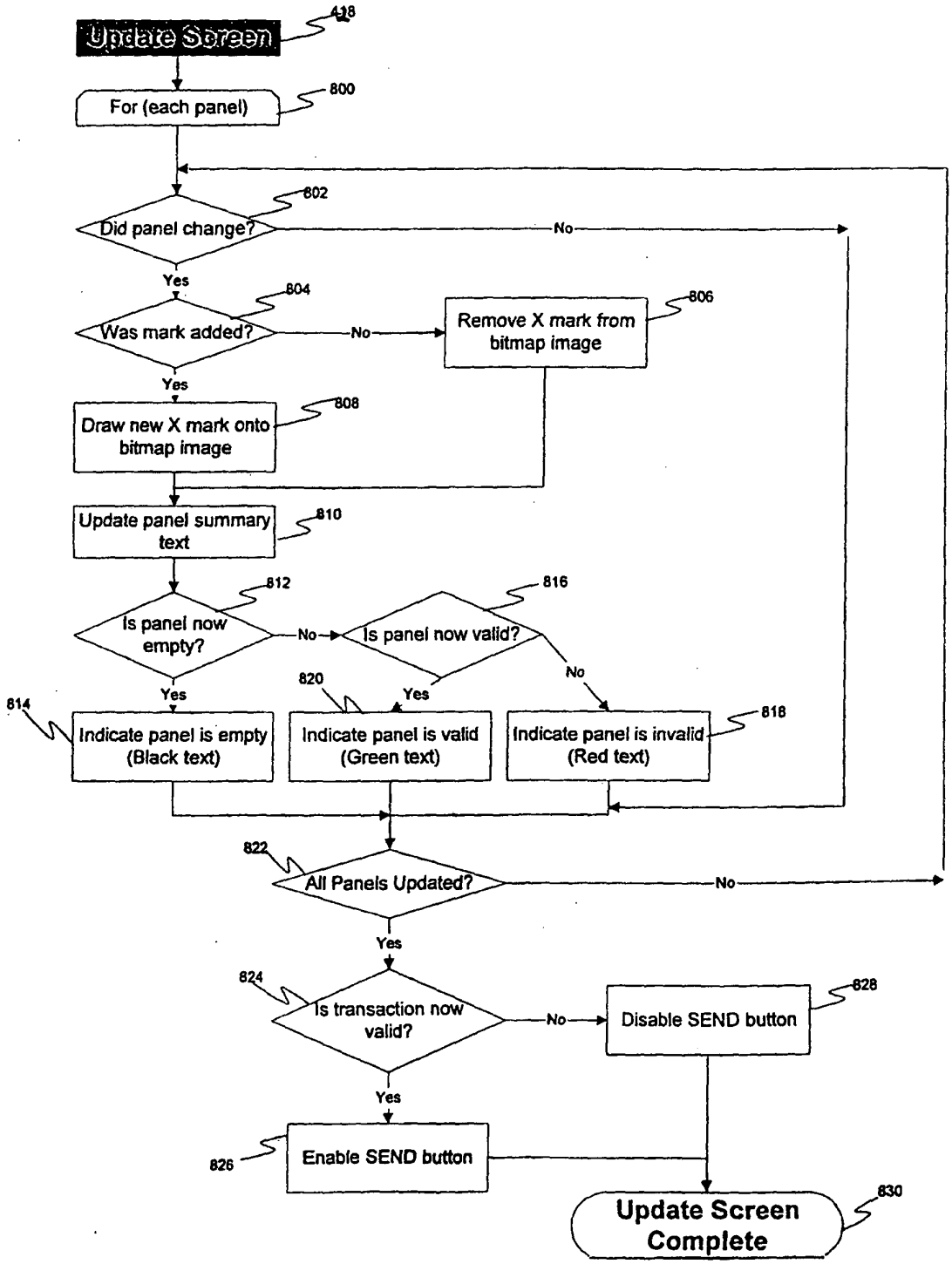

Update Screen
418
For (each panel)
800
Did panel change?
802
No
Yes
Was mark added?
804
No
Remove X mark from bitmap image
806
Yes
Draw new X mark onto bitmap image
808
Update panel summary text
810
Is panel now empty?
812
No
Is panel now valid?
816
No
Yes
Yes
Indicate panel is empty (Black text)
814
Indicate panel is valid (Green text)
820
Indicate panel is invalid (Red text)
818
All Panels Updated?
822
No
Yes
Is transaction now valid?
824
No
Disable SEND button
828
Yes
Enable SEND button
826
Update Screen Complete
830

Fig. 11

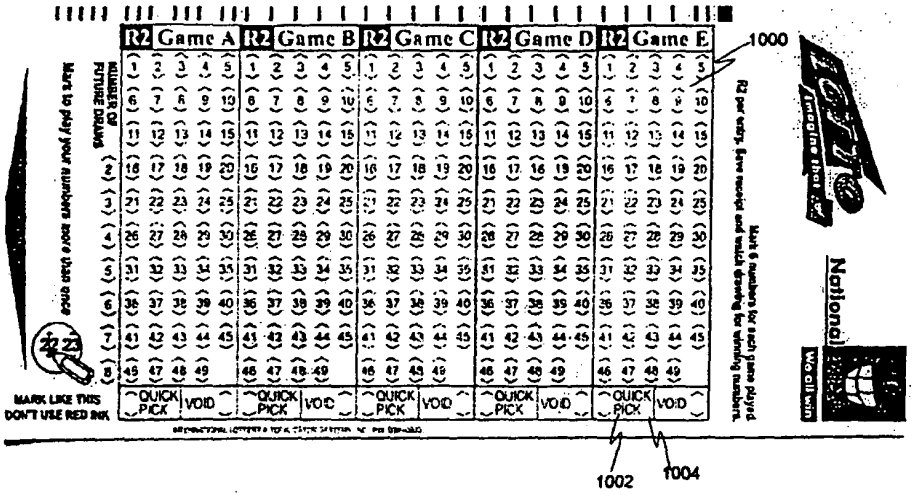

R2 Game A
R2 Game B
R2 Game C
R2 Game D
R2 Game E
QUICK PICK
VOID
1000
1002
1004

Fig. 12

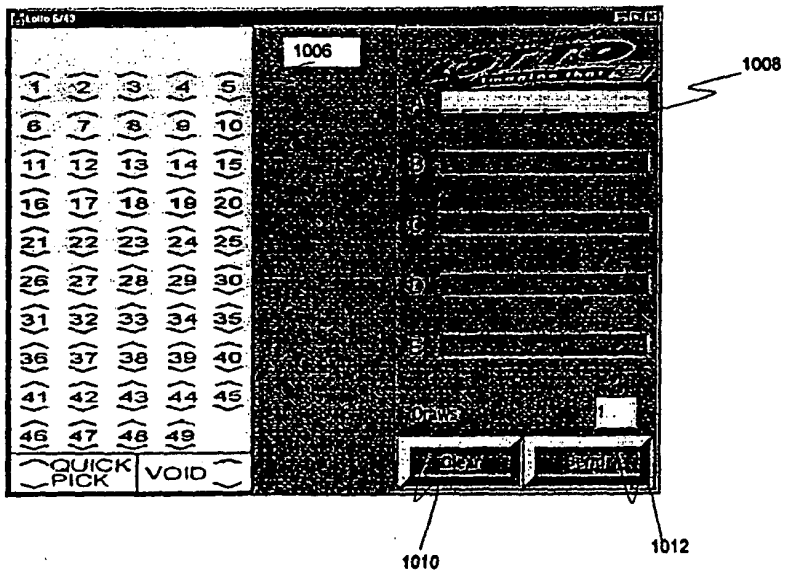

1006
1008
QUICK PICK
VOID
1010
1012

Fig. 13

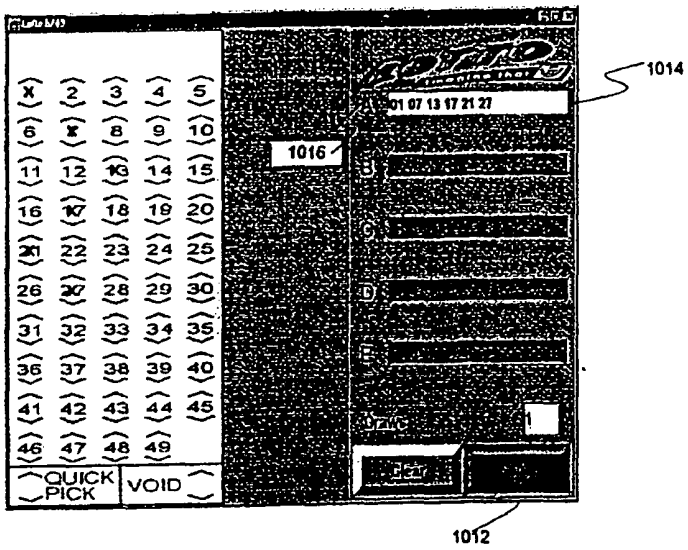

1014
1016
1012
QUICK PICK
VOID

Fig. 14

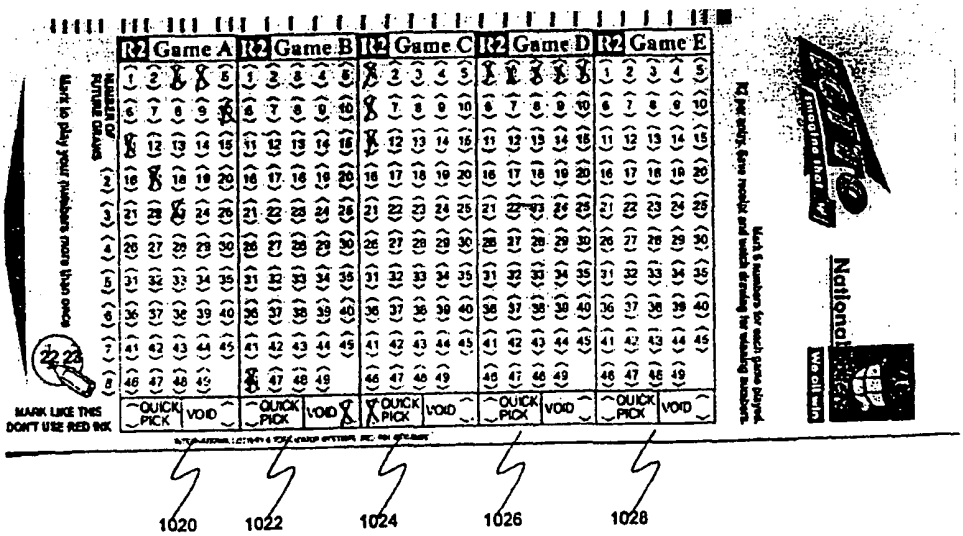

Game A
Game B
Game C
Game D
Game E
QUICK PICK
VOID
1020
1022
1024
1026
1028

Fig. 15

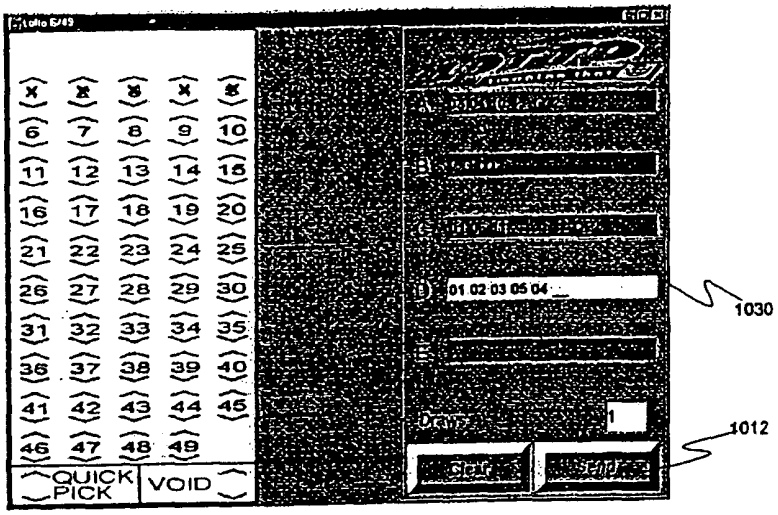


Fig. 16

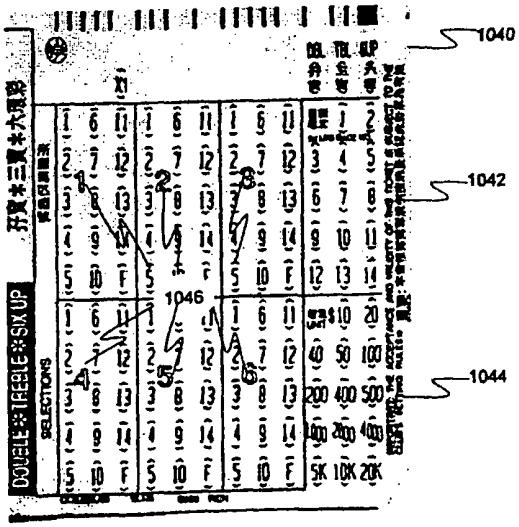


Fig. 17

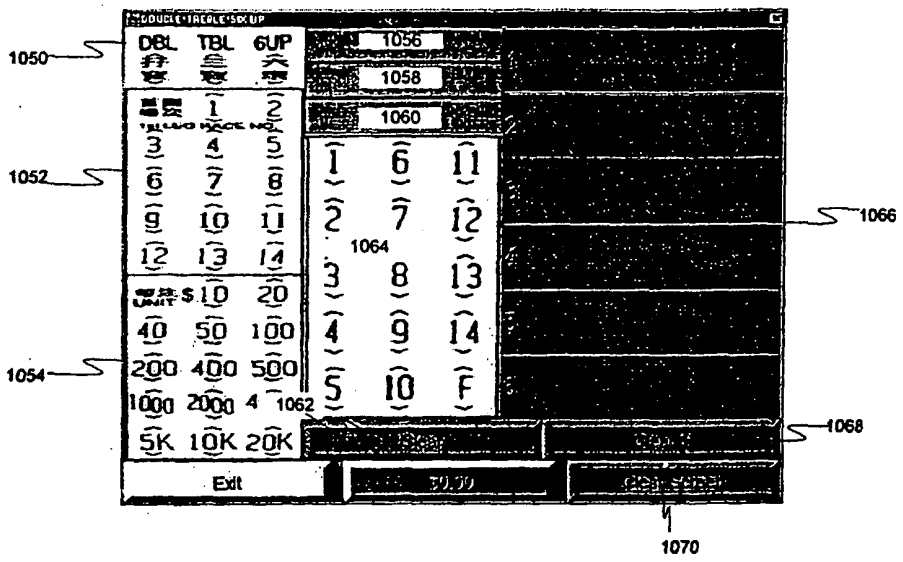

1050
1052
1054
1056
1058
1060
1062
1064
1066
1068
1070
DBL
TBL
6UP
Exit

Fig. 18

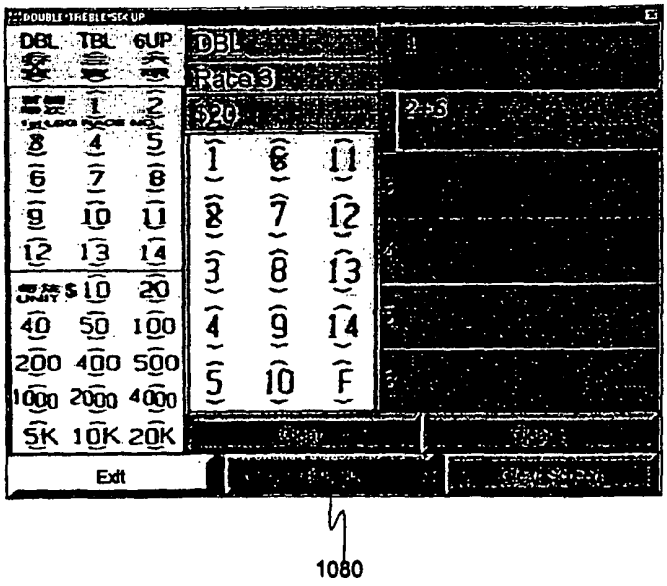

DBL
TBL
6UP
Race 3
$20
Exit
1080

Fig. 19

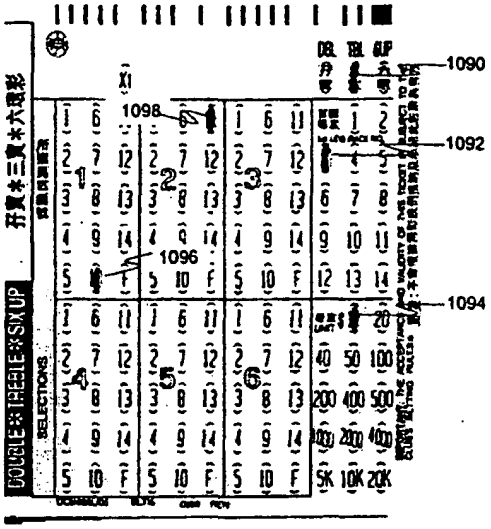
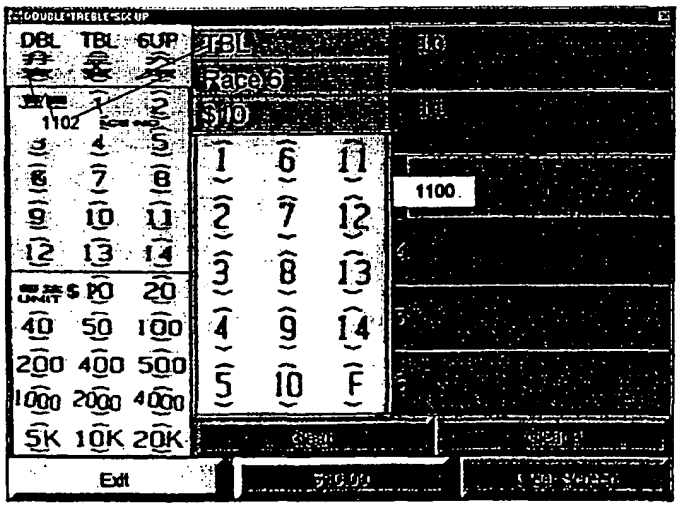

1090
1092
1094
1096
1098
DOUBLE
TREBLE
SIX UP
SELECTIONS

Fig. 20


DBL
TBL
6UP
TBL
Race 5
$10
1102
1100
Exit